Work Orde	er ID 108751 9:56:01 AM	B <sub>108751</sub>	*108	3751*					v- · · · · ·	Page 1
Item ID: Revision ID: Item Name:	D3199-1 Bracket	8751	Accept	*N900	040	100	)* 5	Setup Sta	ı u	S1* S2*
Start Date: Required Date: Reference:	10/29/13 Start Qty: 50.0 10/29/13 Req'd Qty: 50.0			Cust Item Customer:					ı	
Approvals:	Process Plan: _ <u>M</u> しゴ	Date: <u> 3-/0-3\</u>			)ate:		1	Run Sta Sto	171	R1***
Sequence ID/ Work Center II	Operation Description		Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr									,   ,
D3199	E	·								
*100 *100* Waterjet	FLOW WATER JET		0.00				72	•		Jm13-12-
FLOW CNC Waterj	et Cut as p Dwg Re	v:ver Dwg D3199 v:verv:v:ver	0.00							
Prof.	Deburr	if required								
*110 *110*	QC2- Inspect parts of	off machine FAI/FAIB	0.00				Тa			Jmiz 12
QC	Memo		0.00				14			JW12 19

Quality Control

NCR:	/es	/ No				WORK ORDER NON-O	CON	FORM	MANCE / UPI	DATE			
											QA Closed:	Date	
Work Orde	er: _					DISPOSITION	_			AGAINST DE	PARTMENT/	PROCESS	_
Part N	-					Rework Scrap Use-as-is Work Order Update		í	Skid-tube Machining noforming Large Fab	Crosstube Small Fab Finishing Composite		Water Jet d. Eng. Coor. e/Packaging Supplier	Engineering Quality Other
Root	$\neg$		· · · · · · · · · · · · · · · · · · ·		Descri	ption of work order update	lr	nitial	Act	tion	Sign &		
Cause		Date	Step	Qty		or Non-conformance	Chi	ef Eng	Desci	ription	Date	Verification	QC Inspector
Doc/Data			į.										
Equip/Tooling Operator	Н												
Material	H												
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Supplier							ļ.						
Training	П		1										
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	-	Cracks			<u> </u>	Broken/Damaged	-	-	ion Incomplete		Part Incorrec	<del></del>	Weld
	$\vdash$	Crushed/	Crimped		<u> </u>	Burrs	-		ions Incomplete/	Jnclear	Part Lost/Mi	ssing	Wrong Stock Pulled
		Cuffs				Contamination	$\boldsymbol{\vdash}$		enance		Part Moved		
	$\vdash$	Heat Trea			L	Countersink	$\vdash$	Mislabe		<u> </u>	Positioned W		<b>7</b>
	-	Inspectio	•	Tube	L	Cut Too Short		Misread	d	L_	Power Loss/	Surge	Other
	$\square$	Ripples ir				Drill Holes	$\vdash$	Offset					
	$\vdash \vdash$	Torque W			n	Drawing	$\vdash$		Calibration				
	1	Turning S	equence	<u>}</u>		Finish	1	Out of S	Sequence				

Outside Dimensions

DQA:

Date:

Wave/Twist in Tube

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

140

Quality Control

QC5- Inspect part completeness to step on W/O

Memo

9-89

NCR: \	⁄es	/ No				WORK ORDER NON-C		NFORM	MANCE / UPI	DATE				
											QA Close	d: D	ate:	
Work Orde	er:					DISPOSITION				AGAINST DE	PARTMEN	T/PROCESS		
Part N	- . ۱٥۰					Rework Scrap Use-as-is Work Order Update		8	Skid-tube  Machining  noforming  Large Fab	Crosstube Small Fab Finishing Composite	4	Water Je od. Eng. Coor ore/Packaginį Supplie		Engineering Quality Other
Root					Descri	ption of work order update		Initial	Act	tion	Sign &			
Cause		Date	Step	Qty	(	or Non-conformance	Ch	nief Eng	Desci	ription	Date	Verificati	on	QC Inspector
Doc/Data														
Equip/Tooling														
Operator	Ш													
Material	Щ													
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Other	Ш													
Process	Ш													
Supplier	Н						1							
Training	Н													
Unapproved							<u> </u>	LT CATE	CORV		<u> </u>			Was to
Landi	na G	Geor				General C	AUL	LICAIL	GONT					
Landi		Bending			Г	Bend		Grain		Г	Ovalized			Pressure/Forced
	Н	Centre No	ot Conce	ntric to C	o/s	BOM/Route		Hardwa	re	<del> </del>	4	er tolerance	$\vdash$	Temperature/Cure
	H	Cracks				Broken/Damaged	H	-1	ion Incomplete		Part Incom		-	Weld
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		Cuffs	•			Contamination		Mainte	· ·		Part Move	_	L	3
		Heat Trea	at			Countersink		Mislabe	eled		Positioned	Wrong		
		Inspectio	n Strip in	Tube		Cut Too Short		Misread	t		Power Los	s/Surge		Other
		Ripples ir	n Bend			Drill Holes		Offset	•					
		Torque W	Vaves in E	Extrusion	۱ [	Drawing		Out of 0	Calibration					
1		Turning S	Sequence	!		Finish		Out of	Sequence					

Outside Dimensions

DQA:

Date:

Wave/Twist in Tube

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

Work Orde				*108	751*						Page 3	
Item ID: Revision ID: Item Name:	D3199-			Accept	*N900	<b>040</b>	100	<b>)*</b> s	etup Sta	14.	S1* S2*	
Start Date: Required Date: Reference:	10/29/13 10/29/13		*50* *50*		Cust Item I Customer:	D:						
Approvals:	Process QC: _	s Plan:	Date:	_	··· ·· ·· · · · · · · · · · · · · · ·	ate:		R	Run Sta Sto	" <b>  \</b>	R1* R2*	
Sequence ID/ Work Center II  150  *150*  Powdercoat  Powder Coating	<b>D</b>	Operation Description Grey Sandtex(Ref:4.3.5.6  Memo START TIM OVEN TEM FINISH TIM	1E: <b>\$ 30</b> IPERATURE: <b>30</b> 0	Set Up/ Run Hours 0.00	Tool ID	Tool#	Plan Code	Accept Qty 72.	Reject Qty	Reject Number <i>/3-/D-/l</i> C	Insp. Stamp	) ; e
*160 *160* QC Quality Control	i	QC3- Inspect Part Finish  Memo		0.00 DAS 27 0.00 9-89 3 7	2			Con Las				
*160* <sub>QC</sub>	j	•		27	>		(	(C)	A112			

170

Identify as per dwg & Stock Location: 57236 0.00

\*170\*

Packaging

94 PPP 108729 0.00

72 x 28 13-12-16

Packaging

												DQA:	Da	ite:	
NCR: Y	es/	/ No				WORK ORDER NON-O		NFORM	/ANCE / UP	DATE					
									-			QA Closed:	Da	ite:	
Work Orde	ar.					DISPOSITION				AGAINST	DE	PARTMENT,	/PROCESS		
Work Orde		<del>,</del>				Rework	7		Skid-tube	Crosstube			Water Jet		Engineering
Part N	۱o.					Scrap	1		Machining	Small Fab	_	Pro	d. Eng. Coor.	$\vdash$	Quality
	•					Use-as-is	1 1		noforming	Finishing		i	e/Packaging	-	Other
NCR N	۱o.					Work Order Update	]		Large Fab	Composite			Supplier		
Root	ļ		ļ			ption of work order update		Initial		tion		Sign &		-	
Cause		Date	Step	Qty		or Non-conformance	Ch	nief Eng	Desc	ription		Date	Verificatio	'n	QC Inspector
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		Bending				Bend		Grain			L	Ovalized			Pressure/Forced
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		Cracks				Broken/Damaged		Inspecti	on Incomplete			Part Incorred	ct		Weld
		Crushed/	Crimped			Burrs		Instruct	ions Incomplete	/Unclear		Part Lost/Mi	ssing		Wrong Stock Pulled
	Г	Cuffs				Contamination		Mainte	nance			Part Moved			•

Mislabeled

Out of Calibration

Out of Sequence

Outside Dimensions

Misread

Offset

Countersink

Cut Too Short Drill Holes

Drawing

Finish

Folio

Positioned Wrong

Power Loss/Surge

Other

Turning Sequence

Wave/Twist in Tube

Ripples in Bend

Inspection Strip in Tube

Torque Waves in Extrusion

Heat Treat

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

Work Ord October-29-13		08751		*108	3751*					Page 4
Item ID: Revision ID: Item Name:	D3199-1 Bracket			Accept	*N900	<u>040</u>	100	)* s	Setup Sta	*NS1* *NS2*
Start Date: Required Date	10/29/13 e: 10/29/13	<b>Start Qty:</b> 50.00 <b>Req'd Qty:</b> 50.00	*50* *50*		Cust Item I Customer:	ID:				
Reference: Approvals:		an:	Date:	Tooling:	D:	ate:		F		art *NR1*
	QC:		Date:	SPC (Y/N):	D:	ate:				*NR2*
Sequence ID/ Work Center	ID	Operation Description		Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Insp. Number Stamp
180		QC21- Final Inspection -	Work Order Release	0.00						1/2/2/2
*180* QC Quality Control		Memo		0.00				·	_17	1/12/18 4
Quanty Control										m 918

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Work Orde	ar.					DISPOSITION				AGAINST DI	EPART	MENT	/PROCESS		
WORK OTCH	-					Rework	1		Skid-tube	Crosstube	٦		Water Jet	П	Engineering
Part N	Vo.					Scrap	1	•	Machining	Small Fab	1	Pro	d. Eng. Coor.	-	Quality
, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	•••					Use-as-is	1		noforming	Finishing	R		re/Packaging	-	Other
NCR I	No.					Work Order Update	1	•	Large Fab	Composite	1	,	Supplier	$\overline{}$	
	-				<u> </u>	· L_	-		·	•	<b>-</b>				
Root					Descrip	ption of work order update	П	Initial	Act	tion	Sig	n &			
Cause		Date	Step	Qty	c	or Non-conformance	Ch	nief Eng	Desci	ription	D	ate	Verification	n	QC Inspector
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Landi		1				General		1			٦				l_
	_	Bending			. <u>.</u>	Bend	$\vdash$	Grain		-	Oval			<b>—</b>	Pressure/Forced
		Centre N	ot Conce	ntric to C	<sup>D/S</sup>  -	BOM/Route	-	Hardwa		<u> </u>	⊣	-	tolerance	$\vdash$	Temperature/Cure
	$\vdash$	Cracks	·		_	Broken/Damaged	-	-1 -	on Incomplete		┥	Incorre			Weld
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	$\vdash$	Cuffs				Contamination	$\vdash$	Mainte		<u> </u>	⊣ .	Moved			
	Н	Heat Trea		. T la -	-	Countersink	$\vdash$	Mislabe		-		ioned \	-		Other
	$\vdash$	Inspectio	-	rube	$\vdash$	Cut Too Short	$\vdash$	Misread	1	L.	Trow.	er Loss/	Surge		Other
1	1	Ripples in	ı sena			Drill Holes	1	Offset							

Out of Calibration

Out of Sequence

Outside Dimensions

Turning Sequence

Wave/Twist in Tube

Torque Waves in Extrusion

Drawing

Finish

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

## **Picklist Print**

October-29-13 9:56:01 AM

Work Order ID:

Parent Item:

Comments:

108751 D3199-1

Parent Item Name:

Bracket

IPP Rev:C IPP Rev:D Removed Scribing As per Rev B

05-11-05 JLM 06-11-24 JLM

IPP Rev:E 11.03.31 as per ecn 11-

	531 DD verf:EC												
Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M304S20GA 304/316 .040 Sheet		Purchased	No			100	sf	221.6900	0.099	5.210525	sk_	13.1	2.06
				Logotion		Los Otro	La	a Codo					

**Location** Loc Qty Loc Code MAT020 221.69001 m125754 52.17001 m126852 169.52

**Start Date:** 10/29/13

Start Qty: 50.00

Page 1

Required Date: 10/29/13

Required Qty: 50.00

											DQA:	Date	e: _	
NCR: Y	'es	/ No				WORK ORDER NON-C	CON	IFORN	AANCE / UP	DATE	QA Closed:	Date	٠.	
						<u> </u>	_				QA Closed.	Date	е.	
Work Orde	si.					DISPOSITION	ı			AGAINST DE	PARTMENT	/PROCESS		
Work Orac	-''-			<u> </u>		Rework	1 I		Skid-tube	Crosstube	]	Water Jet		Engineering
Part N	lo.					Scrap	1		Machining	Small Fab	Pro	d. Eng. Coor.		Quality
	_					Use-as-is	1	Therm	noforming	Finishing	Rec/Sto	re/Packaging		Other
NCR N	۱o					Work Order Update	]		Large Fab	Composite		Supplier		
Root					Descri	ption of work order update	lr	nitial	Act	tion	Sign &			
Cause		Date	Step	Qty		or Non-conformance	Chi	ef Eng	Desc	ription	Date	Verification		QC Inspector
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Equip/Tooling	Ш													
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Material	Ш													
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. 10			· · · · · · · · · · · · · · · · · · ·	<del></del>			AUL	T CATE	GORY					
Landi	$\overline{}$				г	General Bend		Grain			Ovalized	Г	$\neg$	Pressure/Forced
:	${f -}$	Bending Centre No	at Canaa	ntria ta	~  -	BOM/Route	-	Grain Hardwa		· -	Over/Under	talaranaa	_	Temperature/Cure
	$\boldsymbol{\vdash}$	Cracks	ot concei	illic to	<sup>0/3</sup>  -	Broken/Damaged	$\vdash$		on incomplete		Part Incorre		_	Weld
	Ь——	Cracks Crushed/	Crimped		-	Burrs	-	-	ions Incomplete/	Unclear -	Part Lost/M	- H	_	Wrong Stock Pulled
-	_	Cuffs	Crimped		<u> </u>	Contamination	-	Mainte		Officieal	Part Moved	* L		wrong stock rulled
	$\boldsymbol{\vdash}$	Heat Trea	at		-	Countersink	$\vdash$	Mislabe			Positioned \			
	$oldsymbol{\longmapsto}$	Inspectio		Tube	-	Cut Too Short	$\vdash$	Misread		-	Power Loss/			Other
ı					L				-	i	1	u-	- 1	

Offset

Out of Calibration

Out of Sequence

Outside Dimensions

Turning Sequence

Wave/Twist in Tube

Ripples in Bend

Torque Waves in Extrusion

Drill Holes

Drawing

Finish

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

DART AEROSPACE LTD	Work Order:	108751
Description: Bracket	Part Number:	D3199-1
Inspection Dwg: D3199 Rev: E		Page 1 of 1

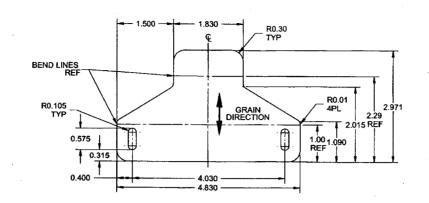
## FIRST ARTICLE INSPECTION CHECKLIST

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø0.210	+0.005/-0.001	. 210			V	JKm-05
0.575	+/-0.010	,573	-		V	
1.090	+/-0.010	1.090	_		V	
2.015	+/-0.010	2.015	_		v	
2.971	+/-0.010	2.971	_		<b>V</b>	
1.830	+/-0.010	1.830	(		V	
4.830	+/-0.010	4, 830			7	
4.030	+/-0.010	4.030	_		V	
-		***				
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			·-·-			

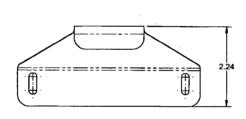
Measured by:	Audited by: 5MB	Preliminary Approval:
Date: 13.12.06	Date: 13 /2 09	Date:

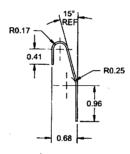
Rev	Date	Change	Revised by	Approved
Α	06.10.20	New Issue	KJ/JLM	2///
В	06.11.24	Dwg Revision revised	KJ/JLM	
С	11.03.08	Dwg Rev updated	KJ . o	
D	12.02.06	Dwg Rev updated	KJ de	

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## **D3199-1F FLAT PATTERN**





108757 MCJ 13-10-31

NOTES:
1) MATERIAL: AISI 304/316 SS SHEET, 0.040 THICK, ANNEALED, 2B FINISH
PER MIL-S-5059, OR AMS 5513 (304) OR AMS 5524 (316) OR ASTM A240 OR ASME SA240
REF DART SPEC M304S20GA
2) FINISH: POWDER COAT "GREY SANDITEX" (4.3.5.6) PER DART QSI 005 4.3
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: IDENTIFY WITH DART P/N "D3199-X" AND B/N "BXXXXX" PER QSI 044 6.1
7) WEIGHT: D3199-1 = 0.11 lbs, D3199-3/-4 = 0.26 lbs EACH

E RE-DES TO OPT		IGNED D3199 IMIZE FIT.	3/-4/-3F PER CUSTOMER FEEDBACK	МВ	11.07.11	1
D TO ELIN		IGNED D3199 INATE BINDI LED. REF.: P.	3-3/-4/-3F PER CUSTOMER FEEDBACK NG OF DOOR ONCE BRACKETS ARE AR11-79	мв	11.03.21	T
С	ADD -3/	4 PART (SHE	ET 2-4)	HS	09.11.19	1
В	2.24 W/	S 2.142; ADD	FINISH, UPDATE DWG	СВ	06.11.01	1
A NEW IS		SUE		СР	03.08.05	1
REV.			DESCRIPTION	BY	DATÉ	1
DESIGN		gp	DART AEROSPA	ACE L	TD	1
DRAWN			HAWKESBURY, ONTAR	IO, CANA	DA	ŧ
CHECKED		in	DRAWING NO.		REV. E	1
MFG, APPR.		R	D3199		SHEET 1 OF 4	
APPROVED		LWL	TITLE		SCALE	1
DE APPR.		#	BRACKET		NTS	1
DATE 11.07.11			COPYRIGHT © 2003 BY DART AEROSPACE LTD THIS DOCUMENT IS PROVIDE AND CONTREMINED, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS			1

В

